

OOSD Presentation

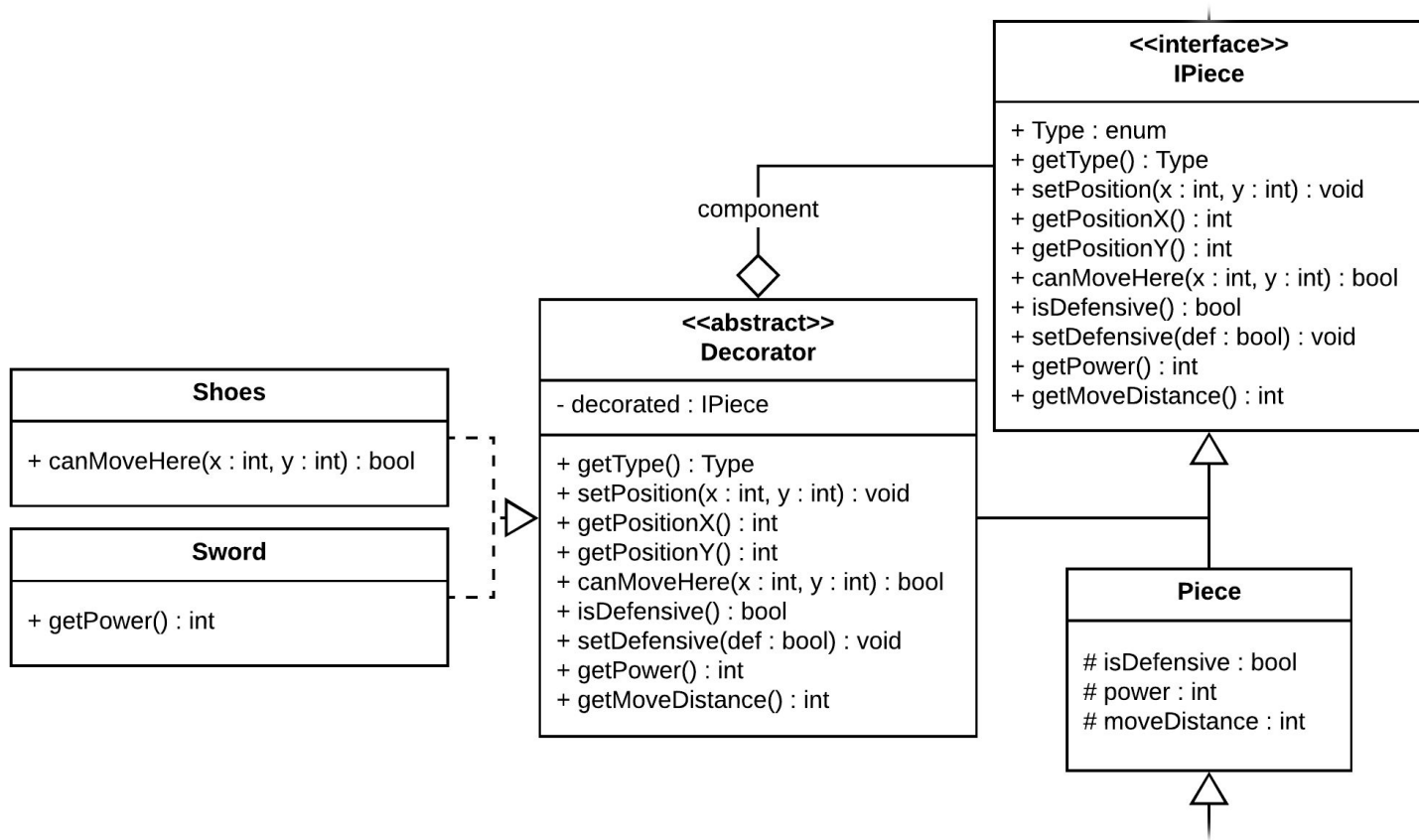
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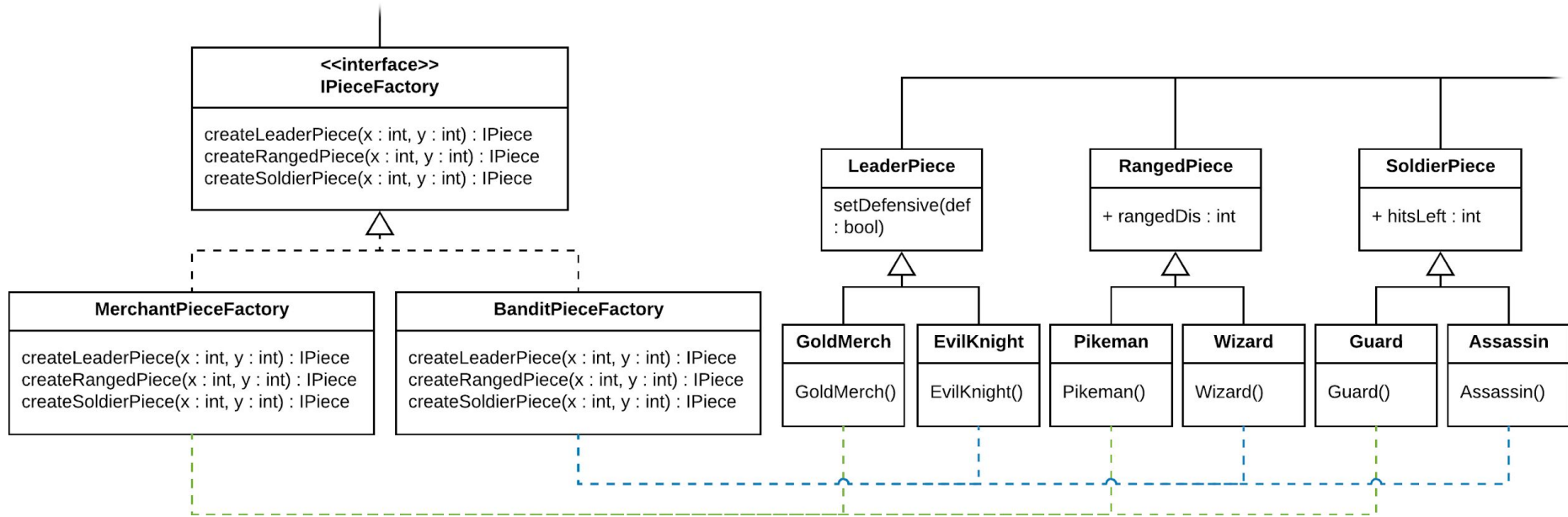
Decorator Pattern (Structural)



Reasoning

- > Decorator is used here because it can attach additional responsibilities to the IPiece object dynamically.
- > This provides a flexible alternative to subclassing for extension, which would be quite complex and challenging..
- > Makes it easier if we were to add further 'decorations'.
- > This provides a runtime behaviour change without destroying existing instances.
- > Decorator does something, then forwards everything else to underlying decorated object.
- > Many combinations of available decorators, so we can't avoid using the decorator pattern.

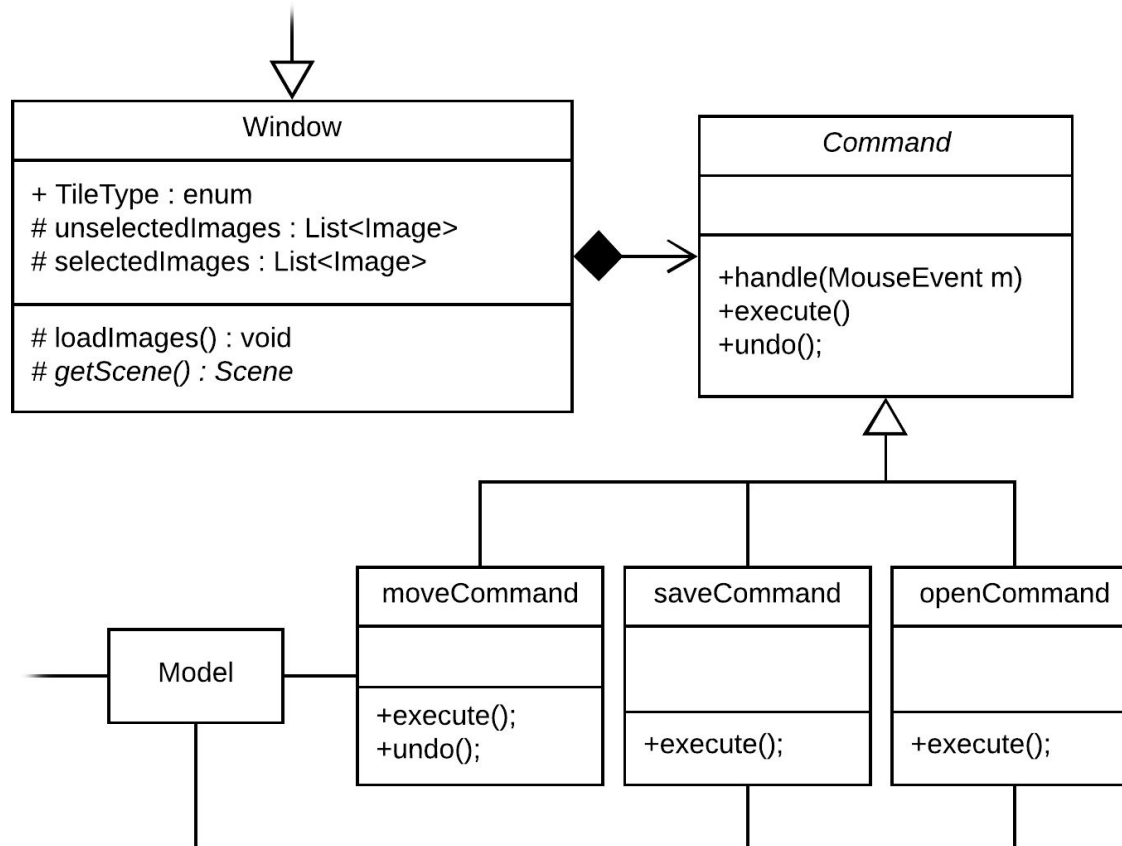
Abstract Factory (Creational)



Reasoning

- > We have multiple families of objects (bandits/merchants) that are created and used together, and are used alongside siblings of the same family (same team).
- > The multiple member types are Leader, Ranged and Soldier.
- > In this case, we provide an interface for creating families of related or dependent objects without specifying their concrete classes.
- > This is used so we don't mix up class families that should be decoupled.

Command Pattern (Behavioural)



Reasoning

- > Command Pattern Encapsulate a request as an object, thereby letting you parameterize clients with different requests, queue or log requests, and support undoable operations
- > A command with the ability to undo its action is the quintessential example of a command with two actions.
- > In the game scenario, where there is no natural reversing action (we can't retrieve the piece after attacking), we can do undo by having the command capture and store a snapshot of the pre-execution state of the receiver.
- > Set list of commands for later use, good place to store procedures to be executed
- > Can store multiple commands in class to use over and over

Blitz Game Rules

- Blue Team
 - Gold Merchant needs to get to the top of the board.
- Red Team
 - Needs to stop the Gold Merchant

	Move Level		
Gold Merchant	2	0	(Leader - Carries Gold)
Evil Knight	3	3	(Leader - Strong/Fast but only 1)
Guard	3	1	(Ranged - Weak/Fast)
Wizard	2	2	(Soldier - Medium)
Pikeman	2	3	(Ranged - Strong/Slow)
Assassin	4	1	(Soldier - Fast moving but weak)

Also units can pickup items, such as Shoes: Gives them extra 1 move.

Units can toggle their mode with each move (defensive halves moves, but adds 1 power)

